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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,645	11/21/2003	Jonathan H. Fischer	46-3	1260

47386 7590 12/27/2006  
RYAN, MASON & LEWIS, LLP  
1300 POST ROAD  
SUITE 205  
FAIRFIELD, CT 06824

EXAMINER
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RODRIGUEZ, GLENDA P

ART UNIT	PAPER NUMBER
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2627

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/27/2006	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/719,645

Applicant(s)

FISCHER ET AL.

Examiner

Glenda P. Rodriguez

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-20 is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 7, 8 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Luo (US Patent No. 6, 111, 467).

Regarding Claim 1, Luo teaches a sample and hold circuit having an input and an output, comprising:

At least one capacitive element for retaining a charge, said at least one capacitive element connected to a node between said input and said output (See Element C1 in Fig. 1);

At least one input switch for selectively connecting said at least one capacitive element to said input (See Fig. 1, Element S1);

At least one output switch for selectively connecting said at least one capacitive element to said output (See Fig. 1, Element S3);

And an amplifier connected to said node, wherein said amplifier has an offset voltage and wherein a voltage drop across at least one of said input and output switches is limited to said offset voltage (See Fig. 1, Element 11 and Col. 3, L. 50-64, wherein it teaches the amplifier having a reference or offset voltage in

which it prevents that the voltage drop in the circuit will not be greater than the offset voltage. It is inherent to a person of ordinary skill to know that capacitors store voltage and hence, while the Element gm and switch S1 is conducting, capacitor C1 will store a voltage offset produced by the circuit. See Col. 3, L. 45-50 and Col. 4, L. 5-10 and L. 33-35).

Method claim (8) is drawn to the method of using the corresponding apparatus claimed in claim (1). Therefore method claim (8) correspond to apparatus claim (1) and is rejected for the same reasons of anticipation as used above.

Regarding Claims 7 and 13, Luo teaches all the limitations of Claim 1 and 8, respectively. Luo further teaches that wherein limiting a voltage drop across at least one of said input and output switches reduces a leakage of said sample and hold circuit (It is inherent that because the voltage drop cannot be greater than the voltage offset, hence it reduces the leakage effect in the circuit by maintaining the voltage offset during the operation of the circuit.).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3, 4 and 10, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luo in view of Beauducel et al (US Patent No. 4, 352, 070).

Regarding Claims 3 and 10, Luo teaches all the limitations of Claims 1 and 8. However, Luo does not explicitly teach wherein at least one of said input and output switches has a leakage

effect represented by a resistor in parallel with said input or output switch and a voltage drop across said resistor is limited to said offset voltage. Beauducel et al. does teach a resistor placed in parallel as disclosed in the sample and hold circuit of Fig. 4, Resistor R<sub>1</sub>. It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Luo's invention with the teaching of Beauducel et al. in order to provide a passive compensation to the circuit (Col. 1, L. 65-67 of Beauducel et al.).

Regarding Claims 4 and 11, Luo teaches all the limitations of Claims 1 and 8. However, Luo does not explicitly teach wherein further comprising at least two switches associated with at least one of said input and output switches, wherein said at least two switches selectively connect at least one of said input and output switches to an output of said amplifier in a hold mode or standard voltages in a write mode to reduce leakage effects due to parasitic diodes in said at least one of said input and output switches. Beauducel et al. teaches two switches found between the input and output nodes in order to hold a voltage amount (See Col. 3, L. 1-20 of Beauducel et al.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Luo's invention with the teaching of Beauducel et al. in order to provide a passive compensation to the circuit (Col. 1, L. 65-67 of Beauducel et al.).

5. Claims 6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luo in view of Mills et al. (US Patent No. 5, 172, 117). Luo teach all the limitations of Claims 1 and 8, respectively. However, Luo does not explicitly teach wherein the hold time is 200 microseconds. Mills et al. teaches a sample and hold circuit in which its hold time is 200 microseconds (Col. 4, L. 35-40 of Mills et al.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Luo's invention with the

teaching of Mills et al. in order to acquire a precise data acquisition (Col. 2, L. 45-50 of Mills et al.).

6. Claims 2, 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luo in view of Sandusky et al. (US Patent No. 5, 825, 571).

Regarding Claims 2, 5 and 9, Luo teach the limitations of Claims 1 and 8, respectively. However, Luo does not explicitly teach wherein the sample and hold circuit is for a disc drive. Sandusky et al. teaches a sample and hold circuit for a preamplifier in a disk drive apparatus (Col. 6, L. 6-24). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Luo's invention with the teaching of Sandusky et al. in order to inhibit AC transients (See Abstract Sandusky et al.).

#### ***Allowable Subject Matter***

7. Claims 14-20 are allowed.

The reasons of allowance are found in the Office Action dated 07/25/06.

#### ***Response to Arguments***

8. Applicant's arguments filed 10/25/06 have been fully considered but they are not persuasive. Applicants argue that Luo does not teach "not limit a voltage drop...to an offset voltage of an amplifier connected to the capacitive element." Examiner cannot concur with the Applicant because Luo does teach a voltage drop according to Col. 4, L. 33-35, wherein the voltage of Capacitor C1 does drop or discharge according to the offset voltage that has been stored when the Capacitor C1 was connected to gm and switch S1, therefore teaching the Claimed limitations.

#### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenda P. Rodriguez whose telephone number is (571) 272-7561. The examiner can normally be reached on Monday thru Thursday: 7:00-5:00; alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea L. Wellington can be reached on (571) 272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



gpr  
12/12/06.



ANDREA WELLINGTON  
SUPERVISORY PATENT EXAMINER